

CLAIM AMENDMENTS
(Ser. No. 10/078,600-Amendment A)

1. (currently amended) In a beverage brewing system connectable with a source of water and having a brew basket for holding extract ingredient, and a mixing chamber for receipt of both liquid drink extract and a quantity of diluent water for mixing together into a beverage, the improvement being a control system, comprising:

a flow meter;

a controllable delivery system for selectively delivering ~~quantity of water from~~ the source to the brew basket to make the liquid drink extract and from the source to the mixing chamber for mixing with the drink abstract~~extract~~; and

means for connecting the source of water to the controllable delivery system including a flow meter for directly measuring an actual quantity of water passing from the source to the delivery system substantially independently of the rate of flow of the water; and

a controller responsive to the actual quantity water directly measured by the flow meter for selectively controlling the delivery system to deliver only a preselected amount of water to at least one of the brew basket and to the mixing chamber.

2. (original) The beverage brewing system of claim 1 in which

the delivery system includes a controlled mixing valve for passing water from the source and the flow meter to the mixing chamber, and

the controller includes means responsive to the flow meter for temporarily storing the actual quantity of water passed through the controlled mixing valve.

3. (original) The beverage brewing system of claim 2 in which

the delivery system includes a controlled brew valve for passing water from the source and the flow meter to the brew basket, and

the controller includes means responsive to the flow meter for at least temporarily storing the actual quantity of water passed through the controlled brew valve.

4. (original) The beverage brewing system of claim 1 in which
the delivery system includes a controlled brew valve for passing water from the source and the flow meter to the brew basket, and
the controller includes means responsive to the flow meter for storing the quantity of water passed through the controlled brew valve.

5. (currently amended) The beverage brewing system of claim 4 including
a brew water tank, and
a siphon connection between the brew water tank and the brew basket, and in which
thea solenoid controlled brew valve passes water to the brew water tank to force an equal quantity of water in the brew water tank to pass to the brew basket through the siphon connection between the brew water tank and the brew basket.

6. (original) The beverage brewing system of claim 4 including
a brew water tank,
a level sensor in the brew water tank for sensing when the brew water tank is at a preselected siphon level above which water is siphoned off through the siphon connection to the brew basket, and
a heating element for heating the brew water in the brew water tank before it is siphoned off to the brew basket.

7. (original) The beverage brewing system of claim 4 including
a brew water tank with a side and a bottom, and in which
the controlled brew valve is connected to the side of the brew water tank adjacent the bottom of the brew water tank, and
the siphon connection is connected to the brew water tank adjacent the top of the brew water tank.

8. (original) The beverage brewing system of claim 1 including in which

the delivery system includes two controlled valves for respectively passing water from the source of water and flow meter to the brew basket and the mixing chamber, and said controller controls the valves to prevent both from being open at the same time.

9. (currently amended) ~~The beverage brewing system of claim 8 in which~~ In a beverage brewing system connectable with a source of water and having a brew basket for holding extract ingredient, and a mixing chamber for receipt of both liquid drink extract and a quantity of diluent water for mixing together into a beverage, the improvement being a control system, comprising:

a flow meter;

a controllable delivery system for delivering a quantity of water from the source to the brew basket to make the liquid drink extract and from the source to the mixing chamber for mixing with the drink extract including two controlled valves for respectively passing water from the source of water and flow meter to the brew basket and the mixing chamber; and

a controller responsive to the flow meter for selectively controlling the delivery system to deliver only a preselected amount of water to at least one of the brew basket and to the mixing chamber, said controller controlling the valves to prevent both from being open at the same time, the controller includes and including

means for storing an output indication of quantity from the flow meter as brew water when the one of the valves connected to the brew water tank is opened and the other one of the valves is closed, and

means for storing an output indication of quantity from the flow meter as mixing water when the other one of the valves connected to the mixing chamber is open and the one valve connected to the brew water tank is closed.

10. (currently amended) ~~The beverage brewing system of claim 1 in which~~ 1. In a beverage brewing system connectable with a source of water and having a brew basket for holding extract ingredient, and a mixing chamber for receipt of both liquid drink

extract and a quantity of diluent water for mixing together into a beverage, the improvement being a control system, comprising:

a flow meter;

a controllable delivery system for delivering a quantity of water from the source to the brew basket to make the liquid drink extract and from the source to the mixing chamber for mixing with the drink extract and

a controller responsive to the flow meter for selectively controlling the delivery system to deliver only a preselected amount of water to at least one of the brew basket and to the mixing chamber, the controller includes including

means for storing a preselected total quantity of brew water that is to be passed through the brew basket,

means for comparing amounts of brew water being measured by the flow meter with the preselected total quantity of brew water, and

means responsive to the comparing means to stop the delivery system from passing more brew water to the brew water tank when the measured quantity of brew water that has passed to the brew water tank.

11. (original) The beverage brewing system of claim 10 including means for changing the preselected total amount of brew water that is to be passed through the brew basket.

12. (original) The beverage brewing system of claim 10 in which

the controller includes means for storing a preselected total quantity of beverage to be made by mixing water passed directly into the mixing chamber with the beverage extract, and

means for comparing the total quantity of water measured by the flow meter with the preselected total quantity of beverage to be made, and

means responsive to the comparing means to stop the delivery system from passing more water to the mixing chamber when the total measured quantity of water that has passed through the flow meter is equal to the preselected total quantity of beverage to be made.

13. (original) The beverage brewing system of claim 12 including means for selectively changing the preselected total quantity of beverage to be made stored in the storing means.

14. (currently amended) ~~The beverage brewing system of claim 1 in which~~ In a beverage brewing system connectable with a source of water and having a brew basket for holding extract ingredient, and a mixing chamber for receipt of both liquid drink extract and a quantity of diluent water for mixing together into a beverage, the improvement being a control system, comprising:

a flow meter;

a controllable delivery system for delivering a quantity of water from the source to the brew basket to make the liquid drink extract and from the source to the mixing chamber for mixing with the drink extract; and

a controller responsive to the flow meter for selectively controlling the delivery system to deliver only a preselected amount of water to at least one of the brew basket and to the mixing chamber, the controller includes including

means for storing a preselected total quantity of mixing water that is to be passed through the brew basket,

means for comparing amounts of mixing water being measured by the flow meter with the preselected total quantity of mixing water, and

means responsive to the comparing means to stop the delivery system from passing more mixing water to the brew water tank when the measured quantity of mixing water that has passed to the brew water tank.

15. (original) The beverage brewing system of claim 14 including means for changing the preselected total amount of mixing water that is to be passed through the brew basket.

16. (currently amended) ~~The beverage brewing system of claim 1 in which~~ In a beverage brewing system connectable with a source of water and having a brew basket for holding extract ingredient, and a mixing chamber for receipt of both liquid drink extract and a

quantity of diluent water for mixing together into a beverage, the improvement being a control system, comprising:

a flow meter;

a controllable delivery system for delivering a quantity of water from the source to the brew basket to make the liquid drink extract and from the source to the mixing chamber for mixing with the drink extract; and

a controller responsive to the flow meter for selectively controlling the delivery system to deliver only a preselected amount of water to at least one of the brew basket and to the mixing chamber, the controller includes including

means for storing a preselected total quantity of beverage to be made by mixing water passed directly into the mixing chamber with the beverage extract, and

means for comparing the total quantity of water measured by the flow meter with the preselected total quantity of beverage to be made, and

means responsive to the comparing means to stop the delivery system from passing more water to the mixing chamber when the total measured quantity of water that has passed through the flow meter is equal to the preselected total quantity of beverage to be made.

17. (original) The beverage brewing system of claim 16 including means for selectively changing the preselected total quantity of beverage to be made stored in the storing means.

18. (currently amended) ~~The beverage brewing system of claim 1 including~~ In a beverage brewing system connectable with a source of water and having a brew basket for holding extract ingredient, and a mixing chamber for receipt of both liquid drink extract and a quantity of diluent water for mixing together into a beverage, the improvement being a control system, comprising:

a flow meter;

a controllable delivery system for delivering a quantity of water from the source to the brew basket to make the liquid drink extract and from the source to the mixing chamber for mixing with the drink extract; and

a controller responsive to the flow meter for selectively controlling the delivery system to deliver only a preselected amount of water to at least one of the brew basket and to the mixing chamber.

- a level sensor in the brew water tank for sensing when the water has reached a preselected siphon level above which water will be siphoned from the brew water tank, means associated with said controller for controlling the distribution system to pass water into the brew water tank until the level reaches the preselected siphon level, and

a siphon connection for passing hot water out from the hot water tank to the brew basket when a substantially equal amount of water from the source is passed through the flow meter and into the brew water tank during a time when the level in the brew water tank is generally at the siphon level.

19. (original) The beverage brewing system of claim 1 including

an electrical heater for heating the water in the brew water tank to a preselected, relatively hot, brewing temperature, and in which

the water from the water source is relatively cold as compared to the relatively hot brewing temperature.

20. (currently amended) The beverage brewing system of claim 1 in which in a beverage brewing system connectable with a source of water and having a brew basket for holding extract ingredient, and a mixing chamber for receipt of both liquid drink extract and a quantity of diluent water for mixing together into a beverage, the improvement being a control system, comprising:

a flow meter;

a controllable delivery system for delivering a quantity of water from the source to the brew basket to make the liquid drink extract and from the source to the mixing chamber for mixing with the drink extract, the delivery system includes including

a controlled brew valve for passing water from the source and the flow meter to the brew basket, and

another controlled mixing valve for passing water from the source and the flow meter to the mixing chamber; and

a controller responsive to the flow meter for selectively controlling the delivery system to deliver only a preselected amount of water to at least one of the brew basket and to the mixing chamber, the controller includes including

means responsive to the flow meter and to the controlled mixing valve being open for temporarily storing the quantity of water passed through the controlled mixing valve as mixing water, and

means responsive to the flow meter and the brew valve being open for temporarily storing the actual quantity of water being passed through the controlled brew valve as brew water.

21. (currently amended) The beverage brewing system of claim 1 in which in a beverage brewing system connectable with source of water and having a brew basket for holding extract ingredient, and a mixing chamber for receipt of both liquid drink extract and a quantity of diluent water for mixing together into a beverage, the improvement being a control system, comprising:

a flow meter;

a controllable delivery system for delivering a quantity of water from the source to the brew basket to make the liquid drink extract and from the source to the mixing chamber for mixing with the drink extract; and

a controller responsive to the flow meter for selectively controlling the delivery system to deliver only a preselected amount of water to at least one of the brew basket and to the mixing chamber, the controller is being responsive to the flow meter to control the delivery system to deliver only a preselected amount of brew water to the brew basket and a preselected amount of mixing water to the mixing chamber.

22. (original) The beverage brewing system of claim 21 in which the controller is responsive to the flow meter to control the delivery system to deliver only a preselected

total measured quantity of water accumulatively delivered to the brew basket and the mixing chamber.

23. (original) The beverage brewing system of claim 1 including means for heating the water in the brew water tank to a preselected temperature relatively higher than that of the water source.

24. (original) The beverage brewing system of claim 1 in which
the brew water tank has an inlet and an outlet, and
the distribution system includes a controlled valve interposed between the flow meter and the inlet of the brew water tank.

25. (original) The beverage brewing system of claim 24 including
means for heating the water to a preselected temperature at which significant liming may occur, and
a valve-less siphon connection for passing relatively hot brew water from the outlet of the brew water tank to the brew basket.

26. (currently amended) The beverage brewing system of claim 25 in which the inlet to the brew water tank is located at a level beneath that of the outlet from the brew water tank.

27. (currently amended) ~~The beverage brewing system of claim 1 in which~~ In a beverage brewing system connectable with source of water and having a brew basket for holding extract ingredient, and a mixing chamber for receipt of both liquid drink extract and a quantity of diluent water for mixing together into a beverage, the improvement being a control system, comprising:

a flow meter;

a controllable delivery system for delivering a quantity of water from the source to the brew basket to make the liquid drink extract and from the source to the mixing

chamber for mixing with the drink extract, the distributiondelivery system includesincluding

a pair of controlled valves for respectively passing water through the flow meter to the brew basket and through the flow meter to the mixing chamber; and
a controller responsive to the flow meter for selectively controlling the delivery system to deliver only a preselected amount of water to at least one of the brew basket and to the mixing chamber.

28. (currently amended) The beverage brewing system of claim 1 including In a beverage brewing system connectable with source of water and having a brew basket for holding extract ingredient, and a mixing chamber for receipt of both liquid drink extract and a quantity of diluent water for mixing together into a beverage, the improvement being a control system, comprising:

a flow meter;

a controllable delivery system for delivering a quantity of water from the source to the brew basket to make the liquid drink extract and from the source to the mixing chamber for mixing with the drink extract;

a controller responsive to the flow meter for selectively controlling the delivery system to deliver only a preselected amount of water to at least one of the brew basket and to the mixing chamber;

another flow meter, and in which

the distributiondelivery system has a pair of controlled valves for respectively passing water through the one flow meter and one of the controlled valves to the brew basket and through the other flow meter and the other of the controlled valves to the mixing chamber.

29-56. (canceled)

57. (currently amended) In a beverage brewer, the improvement being a control system, comprising the combination of:

means for directly measuring with a flow meter substantially independently of flow rate and water pressure a quantity of water being passed to the brewer from an external source of water; and

means for controlling a water ~~distribution~~delivery system of the brewer in response to the measuring means.

58. (currently amended) The beverage brewer of claim 57 in which the directly measuring means is a paddle-wheel type quantity flow meter that is substantially independent of flow rate with one of an electrical and an electromagnetic output representative of the revolutions per-minute of the paddle-wheel, each revolution being representative of a fixed quantity of water passed by the quantity flow meter

59. (currently amended) ~~The beverage brewer of claim 57 in which~~ In a beverage brewer, the improvement being a control system, comprising the combination of:

means for measuring with a flow meter a quantity of water being passed to the brewer from an external source of water; and

means for controlling a water delivery system of the brewer in response to the measuring means, the controlling means includes~~including~~ a computer responsive to the flow meter for controlling the operation of

one controlled valve for passing water directly from the flow meter to a mixing chamber, and

another controlled valve for passing water from the flow meter to the mixing chamber via a brew basket containing brew ingredient.

60. (currently amended) The beverage brewer of claim 57 in which the means for controlling includes

a computer with

a memory for temporarily storing actual amounts of water measured by the flow meter and passed to at ~~measurements of flow for at least one given~~ location.

a memory for storing a preselected total quantity of water desired to be passed to flow for the at least one given location, and

means for comparing the temporarily stored actual amounts of measurements of flow water being stored with the at least one previously stored preselected total quantity for the at least one location, ~~to control the controlled valves to receive only the preselected total quantity of water.~~

61. (original) The beverage brewer of claim 57 including

a brew basket and a mixing chamber, and

the controlling means includes means for selectively varying proportional amount of water delivered to the brew basket and relative to the amount of water delivered to the mixing chamber.

62. (original) The beverage brewer of claim 61 in which the controlling means includes means for selectively changing the total accumulative amounts of water delivered to both the brew basket and the mixing chamber without changing the proportional amount.

63. (original) The beverage brewer of claim 57 including

a brew basket and a mixing chamber, and

the controlling means includes means for controlling the total accumulative amount delivered to both the brew basket and the mixing chamber.

64-70 (canceled)

71. (currently amended) In a beverage brewing system connectable with a source of water and having a brew basket for holding ingredient to be mixed with the water to brew a beverage, the improvement being a control system, comprising:

~~a flow meter;~~

a controllable delivery system for selectively delivering a quantity of water from the source to the brew basket to make the beverage; and

means for connecting the source of water to the controllable delivery system including a quantity meter for directly measuring an actual quantity of water passing from the source to the delivery system substantially independently of water pressure of the source and substantially independently of flow rate of water through the quantity meter; and-

a controller responsive to the actual quantity of water directly measured by the flow meter for selectively controlling the delivery system to deliver only a preselected amount of water to the brew basket.

72. (new) The beverage brewer of claim 71 in which the controllable delivery system includes a solenoid controlled shut-off valve for passing water from the source to the brew basket, said quantity meter being in line with the source and the shut-off valve to measure the quantity of water passed by the shut-off valve when in an open state.

73. (new) The beverage brewer of claim 72 in which the controller includes

means for storing a preselected quantity of water to be passed through the brew basket,

means responsive to the quantity meter for comparing the actual quantity of water passed by the shut-off valve as measured by the quantity meter to the stored preselected quantity, and

means for switching the shut-off valve to a closed position in response to the comparing means determining that the actual quantity of water that has passed through the shut-off valve is equal to the stored preselected quantity.

74. (new) The beverage brewer of claim 71 including a hot water tank with a bottom and a top, a siphon tube at a siphon level adjacent the top and an inlet adjacent the bottom and means for connecting the source of water to the inlet to raise the water in the hot water tank to the siphon level.

75. (new) The beverage brewer of claim 74 including

means for sensing when the water level is at the siphon level, and in which

the controller responds to the quantity meter to measure the quantity of water being passed through the meter only when the water in the hot water tank is at the siphon level.

76. (new) The beverage brewer of claim 71 in which the quantity meter includes a paddle-wheel for passing water incrementally through the meter during rotation of the paddle-wheel and means for indicating to the controller the number of rotations of the paddle-wheel, each rotation representing an incremental quantity of water that has passed through the meter.
